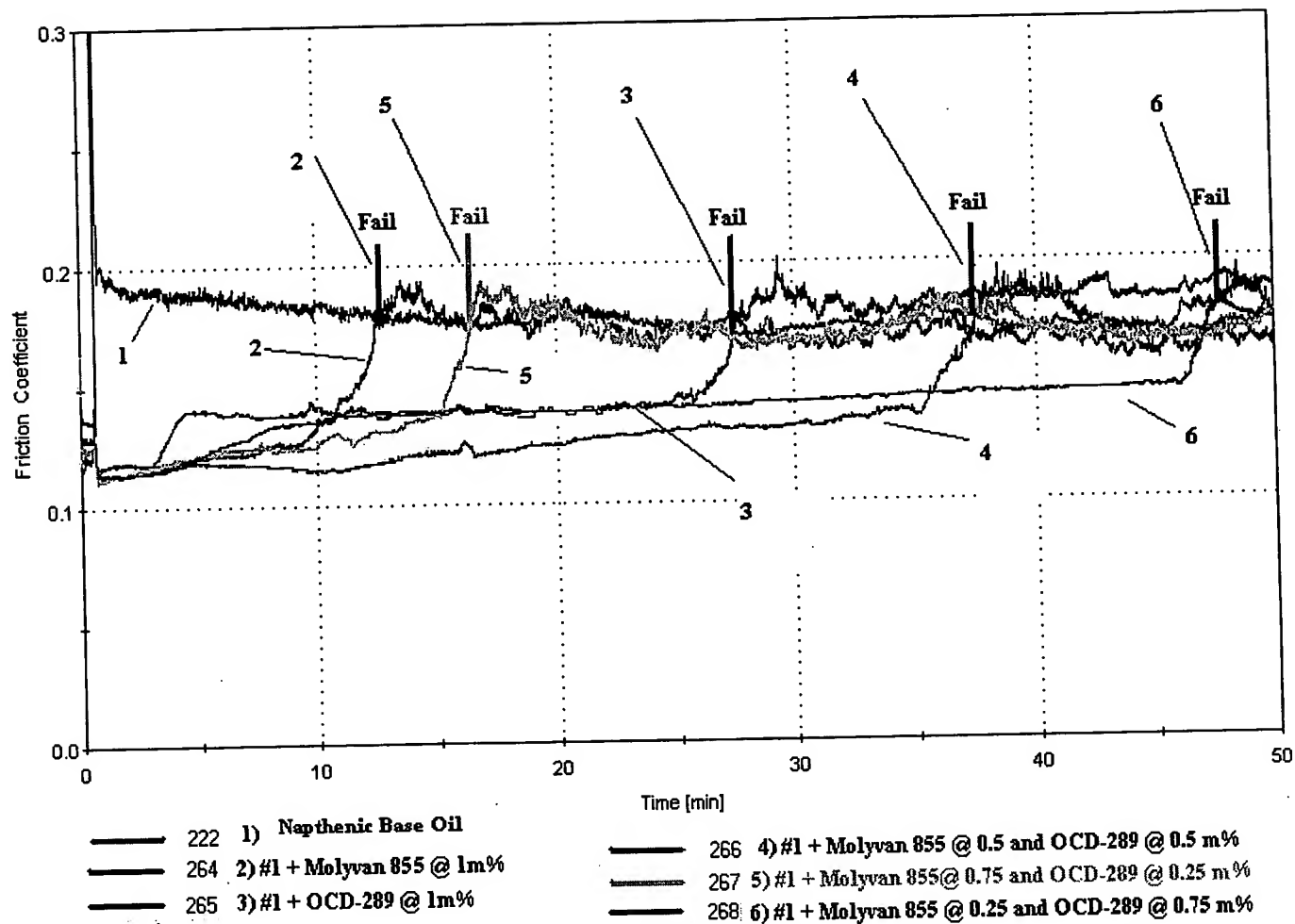


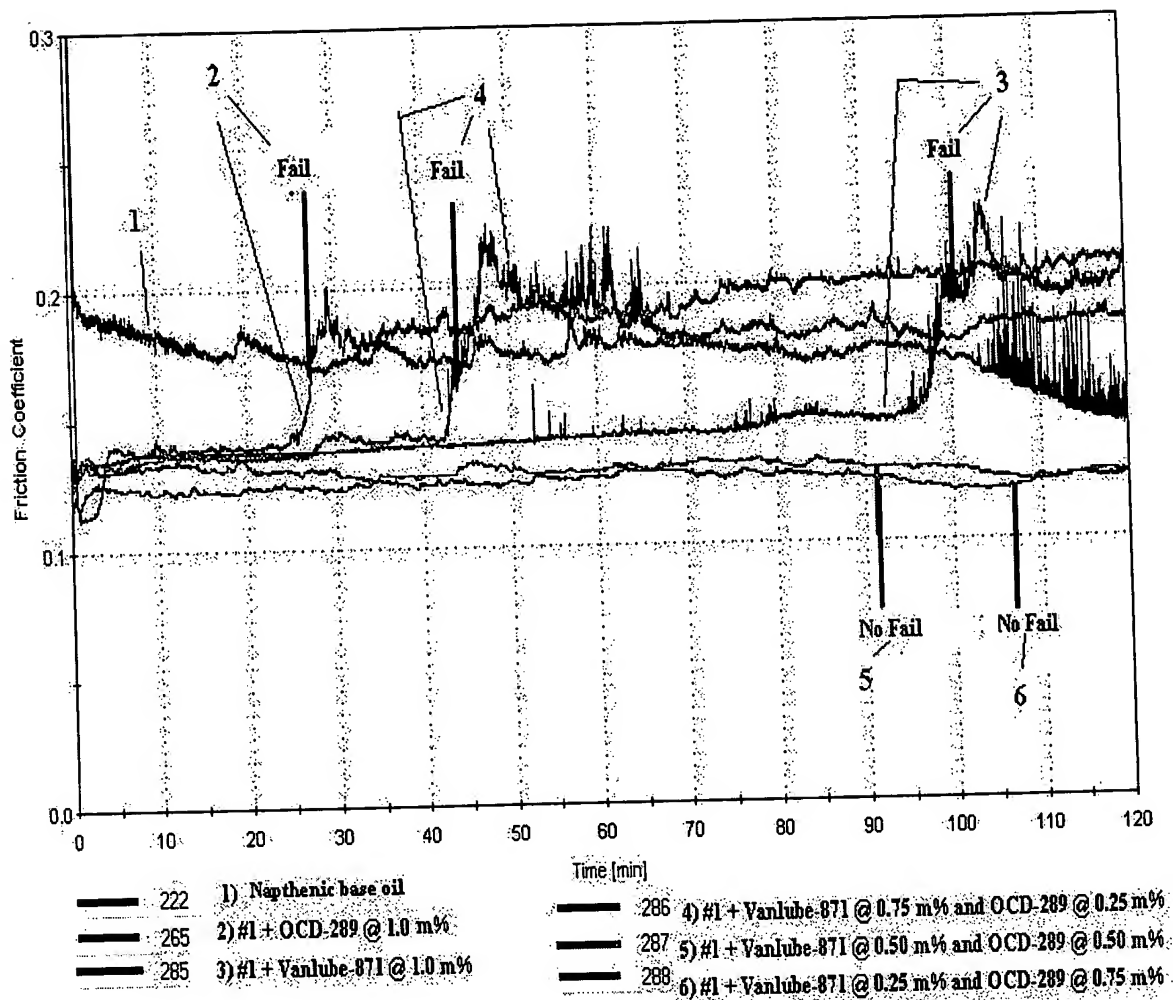
Evaluation of Friction Reducers by ASTM D5707 (SRV)



ASTM D5707 SRV : 200 N; 50Hz ;80C; 1.00 mm stroke; 50 minutes; ball on disk

FIGURE 1

Evaluation of Friction Reducers by ATSM D5707-SRV

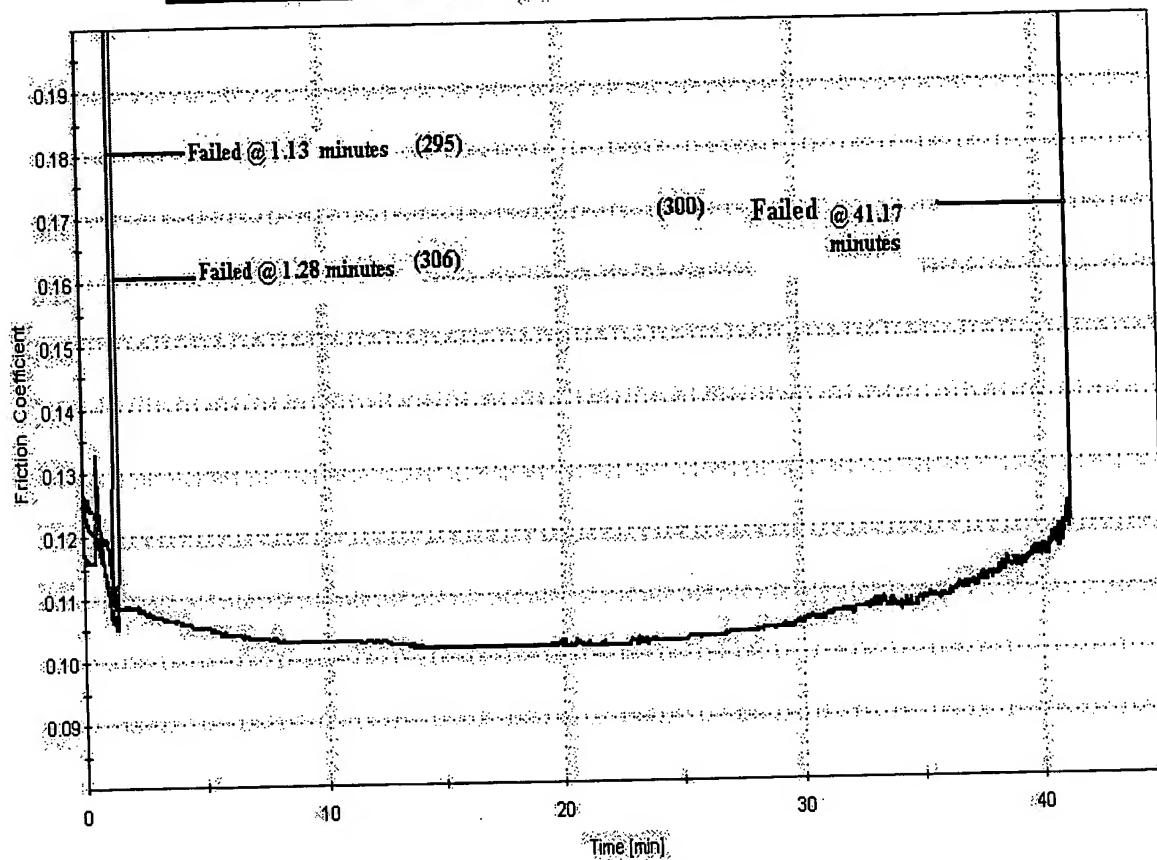


ASTM D5707-SRV : 200 N ; 50 Hz ; 80°C ; 1.0 mm stroke ; 120 minutes ; ball on disk

FIGURE 2

SYNERGISTIC ORGANOBORATE COMPOSITION with ZDDP

Evaluated by ASTM D5707 SRV @ 1000 Newtons (run to failure)



- 295 OCD-289 @ 1 m% (100 ppm B)
- 306 ZDDP @ 1.0 m% (0.10 m% P)
- 300 OCD-289 @ 0.5 m% (50 ppm B) & ZDDP @ 0.5 m% (0.05 m% P)

FIGURE 3

ASTM D5707 SRV : 1000 N ; 50 Hz ; 1 mm stroke ; 80 C ; run to failure ; ball on disk